

电应普
BEST SENSOR



DATASHEET

A02 Series Sensor Module

<https://dypsensord.en.alibaba.com>
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Product Description

1. General

The A02 series sensor module which designed with a closed waterproof bistatic probe. It has a certain level of dust and water resistance, suitable for wet and harsh measurement occasions. The 3cm small blind zone is suitable for different detection conditions. It is a simple-to-operate high-performance, high-reliability commercial-grade functional module.

2. Features

- 3cm small blind zone
- 3.3-5V power input(5-24V for RS485 output)
- Five output interface optional
- Closed waterproof bistatic probe
- Operating temperature from -15°C to +60°C
- Storage temperature from -25°C to +80°C
- Low power consumption design, Static current < 5uA
- Anti-static electricity design in accordance with IEC61000-4-2 standard

3. Advantages

Small blind zone

Strong anti-interference ability

Stable and reliable distance value data output

Low power consumption

Fast response time

Strong anti-static electricity ability

Wide range operating temperature

High measurement accuracy

4. Applications

Horizontal distance sensing

Car Parking system

Robot avoidance and automatic control

Object proximity and presence awareness

Module specification

1. Operating specification

Item	PWM Output	UART Controlled output	UART Auto output	Switch output	RS485 Output	Unit	Remark
Operating voltage	3.3~5	3.3~5	3.3~5	3.3~5	5~24	V	DC
Static current	≤5	≤5	-	-	-	uA	
Average operating current	≤8	≤8	≤8	≤8	≤15	mA	(1)
Peak current	≤40	≤40	≤40	≤40	≤75	mA	
Blind zone	3	3	3	3	3	cm	
Measuring range of flat object	3~450	3~450	3~450	3~450	3~450	cm	
Operating cycle	Controlled	Controlled	100	100	Controlled	ms	
Output interface	PWM	UART	UART	Switch	RS485	-	
Accuracy	$\pm(1+S*0.5\%)$	$\pm(1+S*0.3\%)$				cm	(2)
Temperature compensation	N/A	Support	Support	Support	Support	-	
Beam Angle	$\approx 60^\circ$						(3)

Remarks:

- (1) Typical data by testing with temperature of 25°C, humidity of 65% RH, power supply of 5V, and 100ms duty cycle;
- (2) The temperature is 25°C, humidity is 65% RH, measured object is a 50cm×60cm flat carton, the transducer should be as vertical as possible. S represents the measurement distance;
- (3) The measured object is the reference data obtained from the test of a $\varphi 75\text{mm} \times 100\text{cm}$ white PVC pipe with a distance of 100cm.

2.Environment

Item	Minimum value	Typical value	Max value	Unit	Remark
Storage Temp	-25	25	75	°C	
Storage Humidity		65%	90%	RH	(1)
Operating Temp	-15	25	60	°C	
Operating Humidity		65%	80%	RH	(2)

Remark:

(1) Environment temperature is 0-39°C, max humidity is 90%(Non-condensation)

(2) Environment is 40-50°C, max humidity is the highest at current temperature in nature.

3.Electronics

Item	Minimum value	Typical value	Max value	Unit	Remark
Operating voltage	3.1	5	5.25	V	(1)
	5	12	24	V	RS485 Output
Peak current			40	mA	(1)
			75	mA	RS485 Output
Input ripple			50	mV	Peak value
Input noise			100	mV	Peak value
ESD			±4K/±8K	V	Peak value

Remark: PWM output, UART Controlled output, UART Auto output, Switch output

Contact wire and pin in accordance with IEC61000-4-2 standard

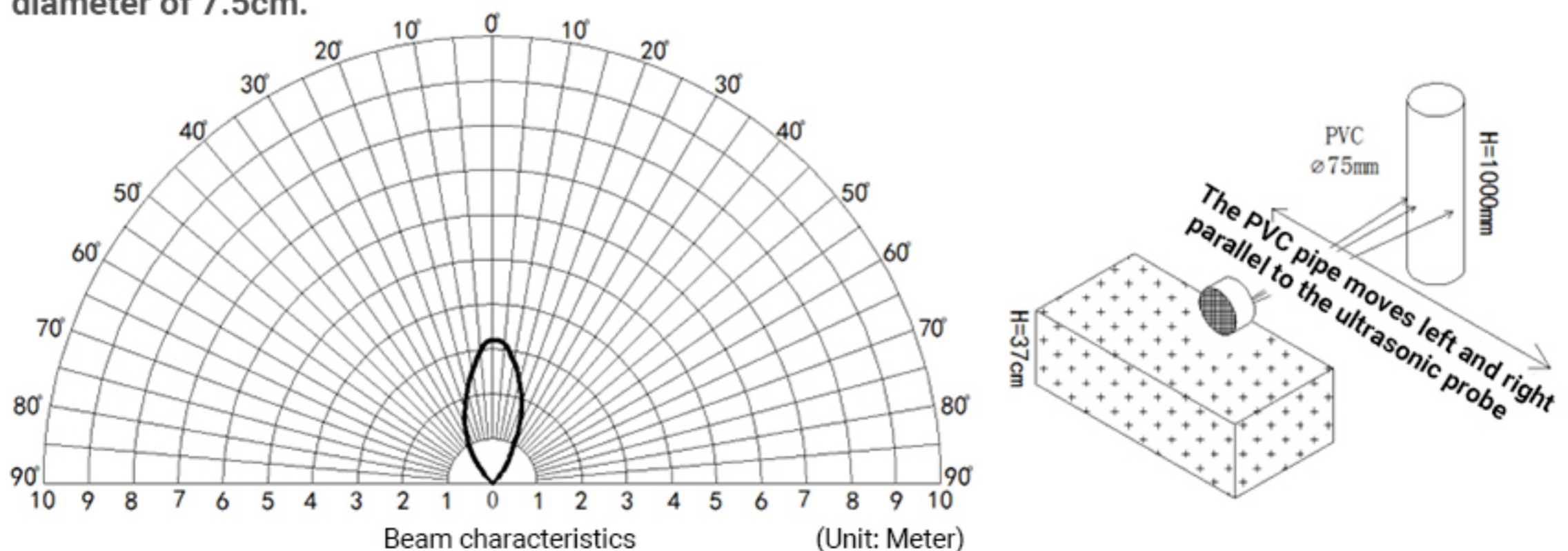
Sensor Selection Instruction

The sensor module including flat object and human body distance measurement modes. The user can choose the corresponding model according to the actual application needs.

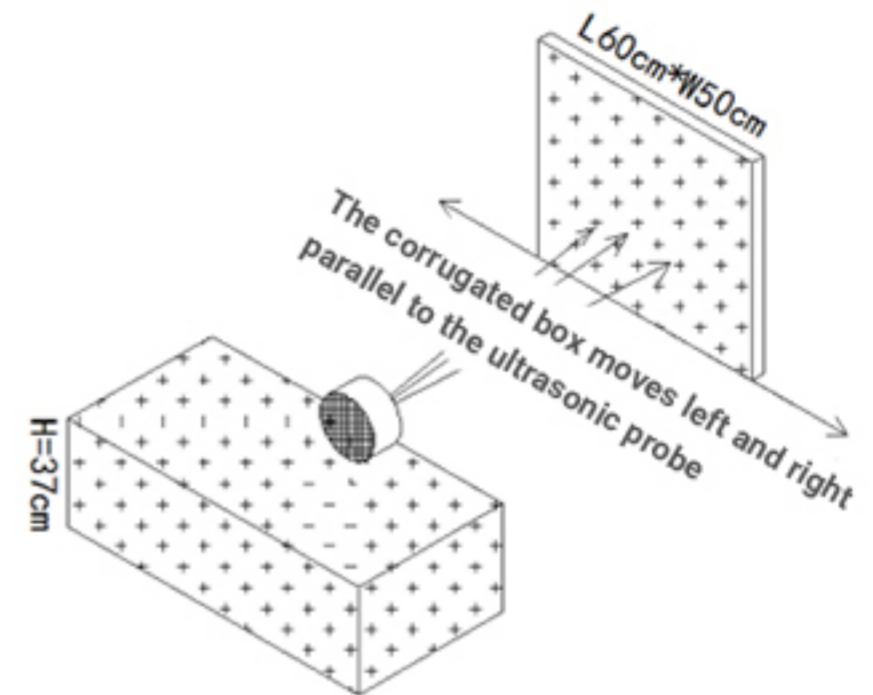
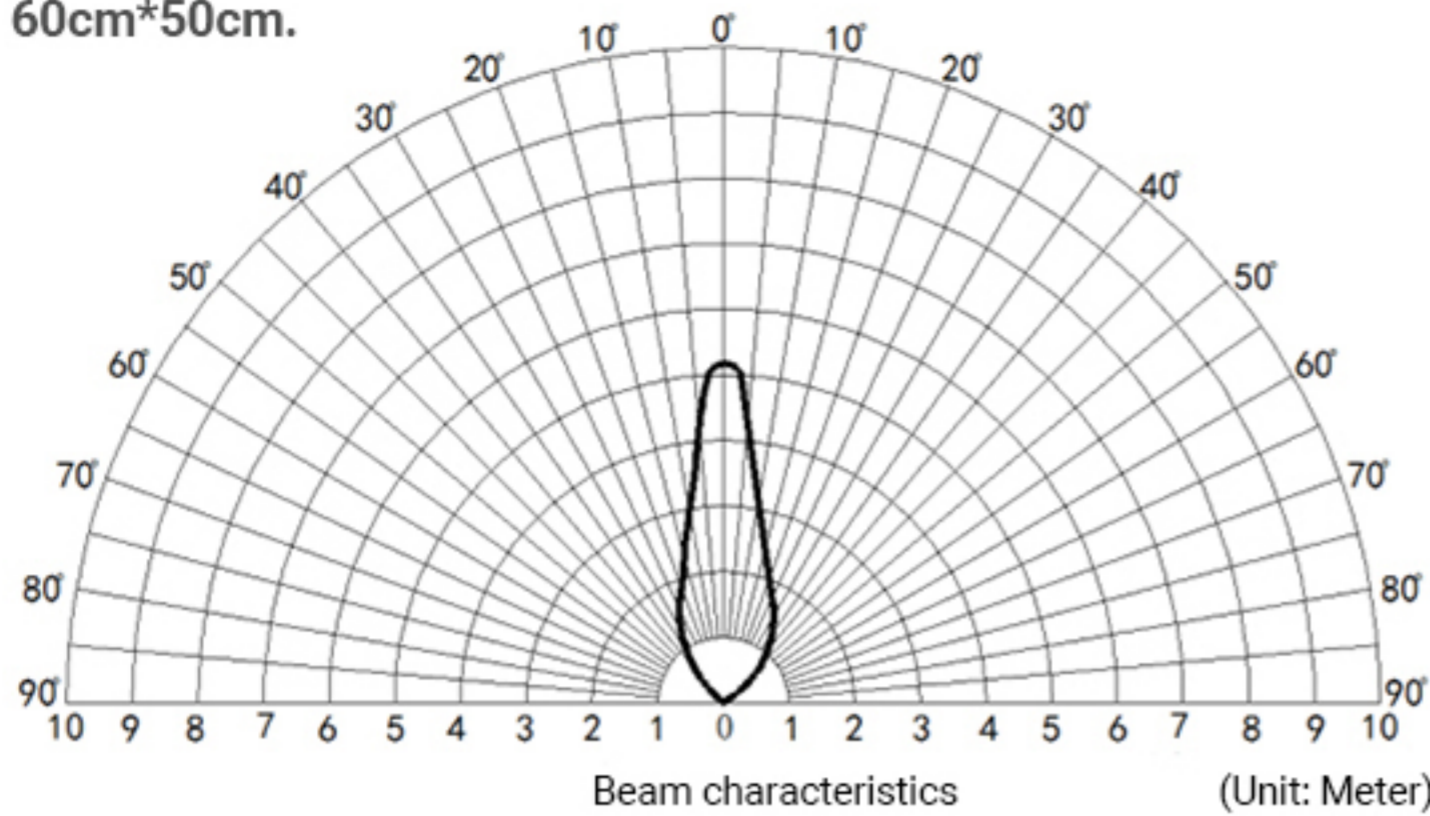
No.	Model No.	Description	Output interface	Reamrk
1	DYP-A02YYU-V2.0	Bistatic waterproof probe	UART Auto	
2	DYP-A02YYT-V2.0	Bistatic waterproof probe	UART Controlled	
3	DYP-A02YYM-V2.0	Bistatic waterproof probe	PWM Output	
4	DYP-A02YYGD-V2.0	Bistatic waterproof probe	Switch output	
5	DYP-A02YYUW-V2.0	Bistatic waterproof probe, waterproof case	UART Auto	
6	DYP-A02YYTW-V2.0	Bistatic waterproof probe, waterproof case	UART Controlled	
7	DYP-A02YYMW-V2.0	Bistatic waterproof probe, waterproof case	PWM Output	
8	DYP-A02YYGDW-V2.0	Bistatic waterproof probe, waterproof case	Switch output	
9	DYP-A02YY4W-V2.0	Bistatic waterproof probe, waterproof case	RS485 output	

Beam Pattern

(1) The tested object is a white cylindrical tube made of PVC material, with a height of 100cm and a diameter of 7.5cm.



(2) The tested object is a corrugated box perpendicular to the 0° central axis, with a length * width of 60cm*50cm.



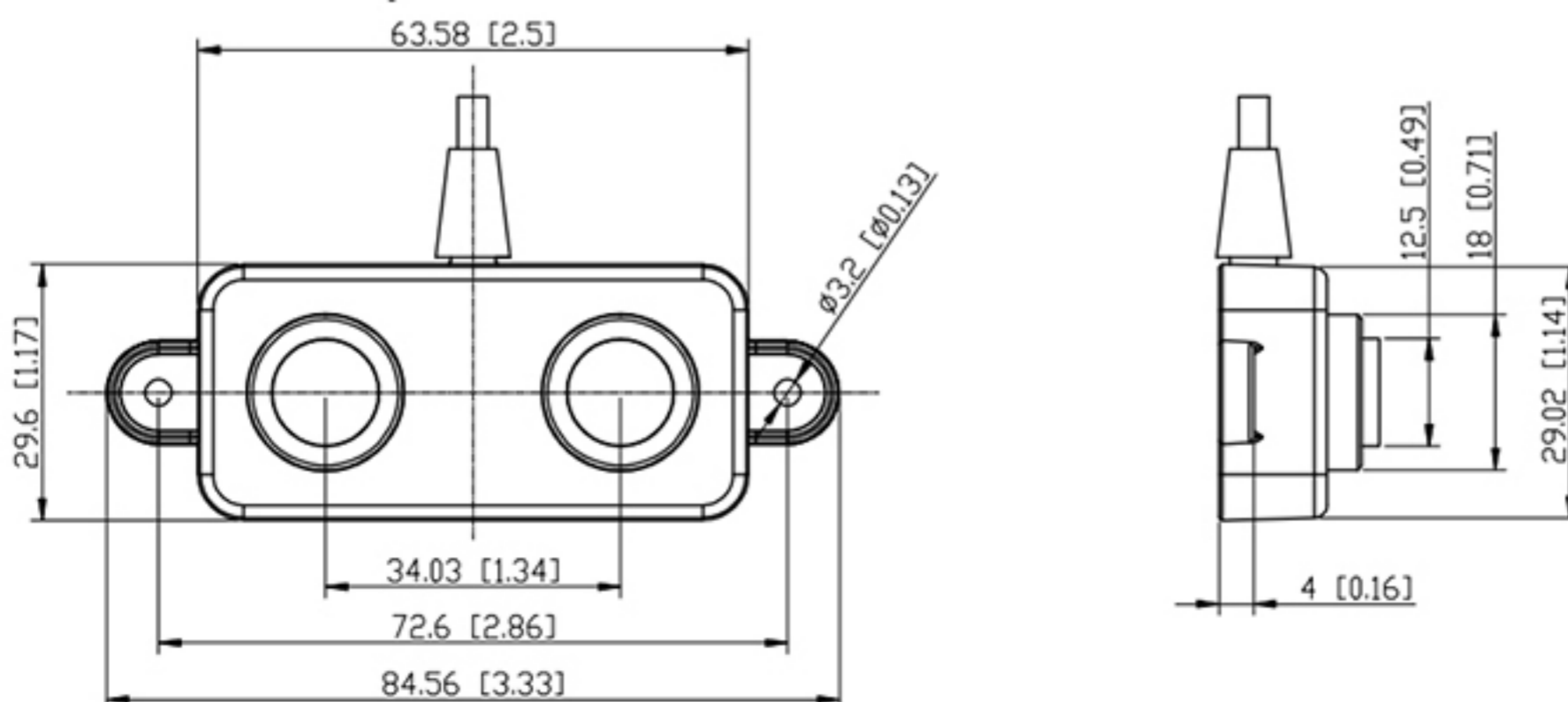
Notice

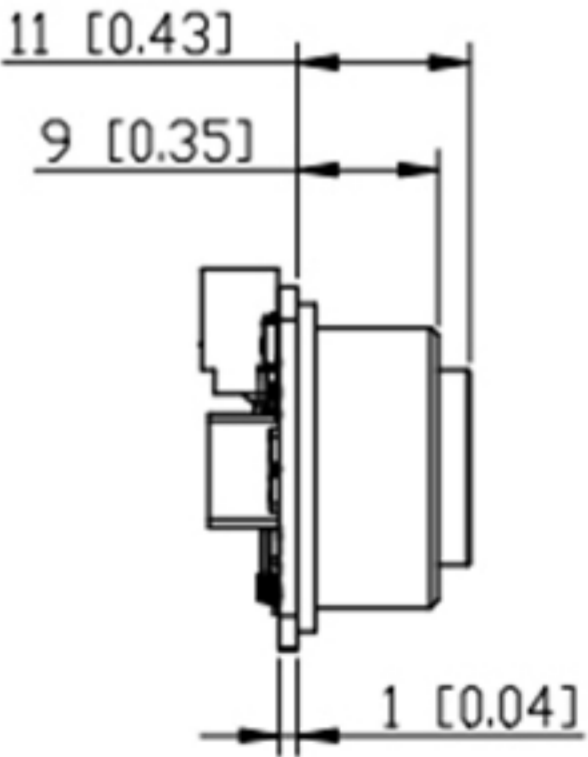
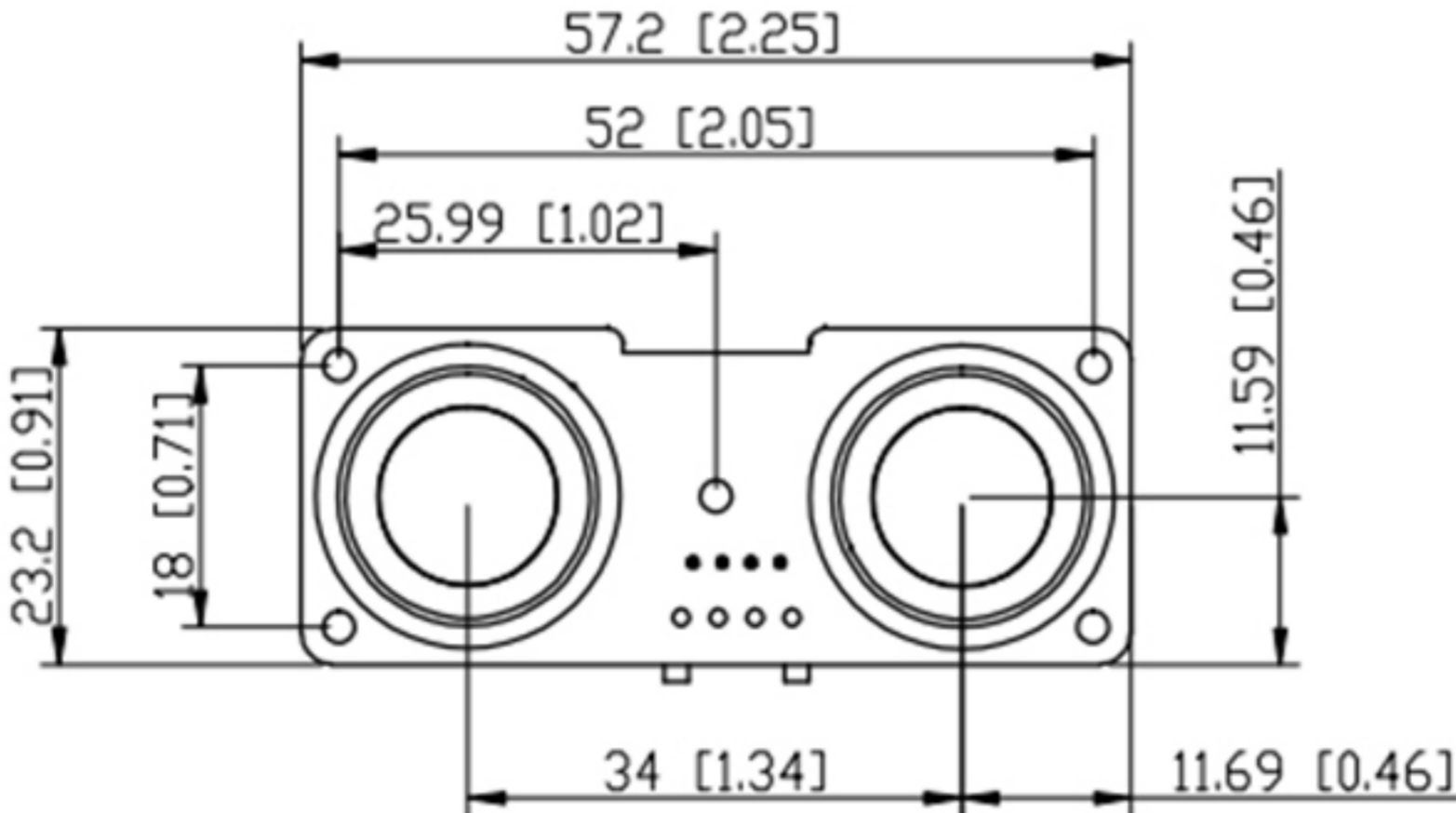
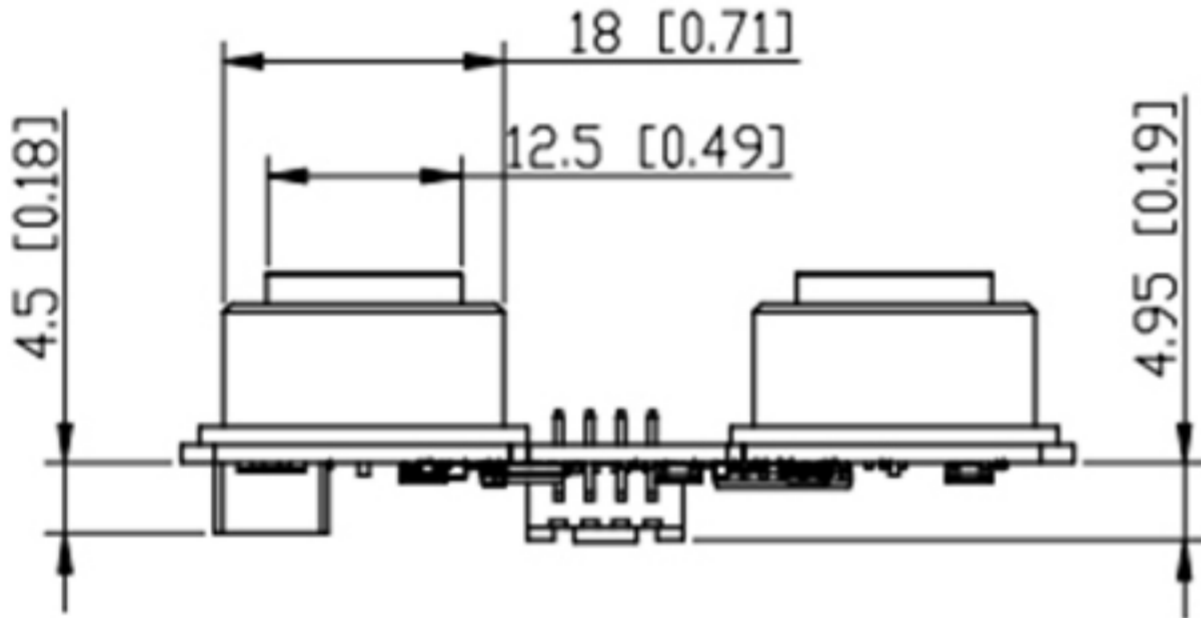
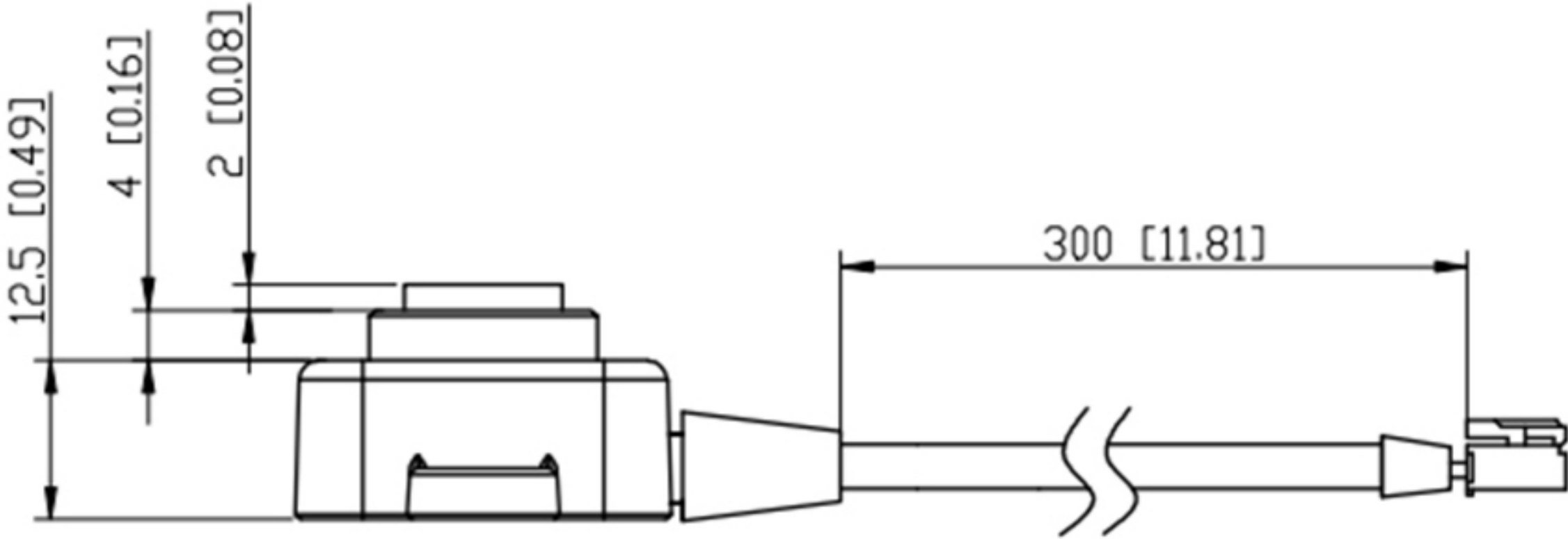
- (1). Please pay attention to the structural tolerances when designing. Unreasonable structural design may cause temporary abnormalities in module functions.
- (2). Please pay attention to the evaluation of electromagnetic compatibility when designing. Unreasonable system design may cause malfunction of the module.
- (3). When the boundary application of the product limit parameter is involved, you can contact after sale service dept. to confirm the relevant precautions.
- (4). The company reserves the right to change this document and update the functions without prior notice.

Mechanics

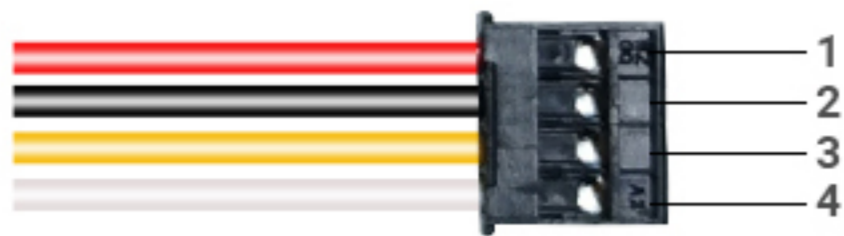
1. Mechanical Dimensions (mm-inch)

A02 Series waterproof module with case

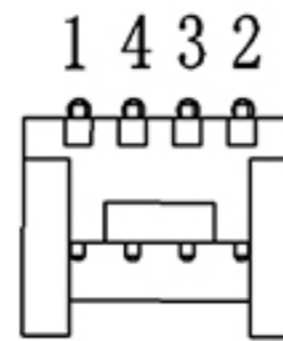




2. Pin out



A02 series with waterproof case



A02 Series without case

Pin No.	Mark	Description	Remark
①	VCC	Power input	
②	GND	GND	
③	RX	Functional PIN	different output modes have different functions
④	TX	Functional PIN	different output modes have different functions

Remarks: The pin function corresponds to the output mode selected before ordering, and cannot coexist with the functions of other output modes